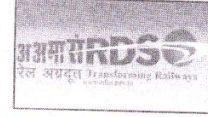




भारत सरकार - रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
लखनऊ - 226 011
EPBX (0522) 2451200
Fax : 0522 - 2452581

Government of India-Ministry of Railways
Research Designs & Standards Organisation
Lucknow - 226 011
DID (0522) 2450115
DID (0522) 2465310



No. EL/3.2.182

Date: 02.12.2011

Chief Electrical Engineer,

Central Railway, Mumbai CST 400001
Eastern Railway, Fairlie Place, Kolkata 700 001
East Central Railway, Hajipur, Bihar-844 101
Northern Railway, Baroda House, New Delhi 110 001
South Central Railway, Rail Neelayam, Secunderabad 500 371
South Eastern Railway, Garden Reach, Kolkata 700 043
West Central Railway, Jabalpur (MP) 482 001
South East Central Railway, Bilaspur-495004 (Chhatisgarh).

SPECIAL MAINTENANCE INSTRUCTION NO. RDSO/2011/EL/SMI/0272(Rev '0')
Dated 02.12.2011

1. **Title:** Use of Extreme pressure Lubricant Paste for Shafting of Rotors of Traction Motors type 6FRA 6068 and 6FXA7059 to prevent damage to stampings and scoring of shafts at the time of removal of shaft.
2. **Brief History:**
During de-shafting of rotors of traction motor (TM) type 6FRA 6068, TMW, Nasik has reported permanent damage to stampings and scoring of the shaft. Damage to stampings are to the extent that they can't be reused. This matter was deliberated during ML's visit to TMW, NK in June 2010 and it was decided to issue the correct procedure for re-shafting of rotors of TM type 6FRA 6068. RDSO and TMW, NK have jointly studied the problem and concluded to use thin film of extreme pressure lubricant on the shaft will overcome this problem. An experiment was carried out at TMW, NK to establish the benefits of the use of extreme pressure lubricant paste and the results have been found encouraging, as reported by CEE/CR vide letter no. L.744.TMW.3Phase locomotive, dt. 05.10.2011. In fact, while manufacturing, if the proposed extreme pressure lubricant paste of shafting is used, the pressure required for shaft removal is less, resulting in no damage to stamping and shafts. The same procedure can be applicable to rotors of TM type 6FXA7059.
3. **Object:** This SMI gives the procedure to be adopted during shafting of rotors for TMs type 6FRA 6068 and 6FXA7059, both at the time of new manufacturing and repair.
4. **Procedure:** This procedure recommends using extreme pressure lubricant paste on the shaft before shafting. Typical Key properties of the extreme pressure lubricant paste are given as under and some of the equivalent products in the market are Molycote (R) G-N Plus of Dow Corning, High Temperature EP grease MK-WS2-HT from M K Impex Canada,

etc:(The details of other equivalent products available in the market may be sent to RDSO for evaluation)

Parameters	Values
Density	>1.0 grams per cc
Load Carrying Capacity	> 2500 4 ball weld, N
Service Temperature High	>600 °C

- 4.1. Clean the shaft properly to remove rust, grease, etc.
- 4.2. Stir the extreme pressure lubricant paste properly.
- 4.3. Apply a thin film of extreme pressure lubricant paste on the shaft .
- 4.4. Keep the rotor in oven at 250-300 °C for 12-14 Hrs.
- 4.5. Put the rotor on 400T press with pressing in fixture
- 4.6. Apply pressure gradually up to 80-100T pressure till shaft pressed in the rotor

5. **Application to class of Locomotives:**

WAP5/WAG9/WAP7 locomotive for traction motors type 6FRA6068 and 6FXA7059.

6. **Agency of Implementation:-**

6.1. **All Workshops/TM Sheds undertaking repair of** traction motors type 6FRA6068 and 6FXA7059.

6.2. **CLW and all the vendors approved for manufacturing & repair of rotors**

7. **Periodicity of Implementation:** At the time of new manufacturing and whenever the re-shafting is required.

Encl: nil


(GANESH)
for Director General/Electrical

Distribution: As per standard mailing list